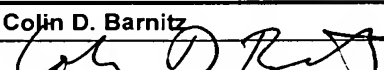| PETITION FEE Under 37 CFR 1.17(f), (g) & (h) **TRANSMITTAL** (Fees are subject to annual revision) Send completed form to: Commissioner for Patents P.O. Box 1450, Alexandria, VA 22313-1450	Application Number	10/791,479
	Filing Date	March 2, 2004
	First Named Inventor	M. MAEDA, et al
	Art Unit	
	Examiner Name	
	Attorney Docket Number	H-1211

Enclosed is a petition filed under 37 CFR §1.17(h) that requires a processing fee (37 CFR 1.17(f), (g), or (h)). Payment of $ 130.00 is enclosed.

    This form should be included with the above-mentioned petition and faxed or mailed to the Office using the appropriate Mail Stop (e.g., Mail Stop Petition), if applicable. For transmittal of processing fees under 37 CFR 1.17(i), see form PTO/SB/17i.

Payment of Fees (small entity amounts are NOT available for the petition (fees)

☒ The Commissioner is hereby authorized to charge the following fees to Deposit Account No. 50-1417:

    ☐ petition fee under 37 CFR 1.17(f), (g) or (h)   ☒ any deficiency of fees and credit of any overpayments
    Enclose a duplicative copy of this form for fee processing.

☐ Check in the amount of $ _____ is enclosed.

☒ Payment by credit card (From PTO-2038 or equivalent enclosed). Do not provide credit card information on this form.

Petition Fees under 37 CFR 1.17(f):   **Fee $400**   **Fee Code 1462**
For petitions filed under:
§ 1.53(e) - to accord a filing date.
§ 1.57(a) - to according a filing date.
§ 1.182 – for decision on a question not specifically provided for.
§ 1.183 – to suspend the rules.
§ 1.378(e) for reconsideration of decision on petition refusing to accept delayed payment of maintenance fee in an expired patent.
§ 1.741(b) – to accord a filing date to an application under §1.740 for extension of a patent term.

Petition Fees under 37 CFR 1.17(g):   **Fee $200**   **Fee code 1463**
For petitions filed under:
§1.12 - for access to an assignment record.
§1.14 - for access to an application.
§1.47 - for filing by other than all the inventors or a person not the inventor.
§1.59 - for expungement of information.
§1.103(a) - to suspend action in an application.
§1.136(b) - for review of a request for extension of time when the provisions of section 1.136(a) are not available.
§1.295 - for review of refusal to publish a statutory invention registration.
§1.296 - to withdraw a request for publication of a statutory invention registration filed on or after the date the notice of intent to publish issued.
§1.377 – for review of decision refusing to accept and record payment of a maintenance fee filed prior to expiration of a patent.
§1.550(c) – for patent owner requests for extension of time in ex parte reexamination proceedings.
§1.956 – for patent owner requests for extension of time in inter partes reexamination proceedings.
§ 5.12 – for expedited handling of a foreign filing license.
§ 5.15 – for changing the scope of a license.
§ 5.25 – for retroactive license.

Petition Fees under 37 CFR 1.17(h):   **Fee $130**   **Fee Code 1464**
For petitions filed under:
§1.19(g) – to request documents in a form other than that provided in this part.
§1.84 – for accepting color drawings or photographs.
§1.91 – for entry of a model or exhibit.
§1.102(d) – to make an application special.
§1.138(c) – to expressly abandon an application to avoid publication.
§1.313 – to withdraw an application from issue.
§1.314 – to defer issuance of a patent.

Name (Print/Type)	Colin D. Barnitz	Registration No. (Attorney/Agent)	35,061
Signature		Date	August 29, 2005

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	10/791,479	Confirmation No. 2092
Applicant	:	MAEDA, M. et al.	
Filed	:	March 2, 2004	
Title	:	DISK ARRAY DEVICE AND METHOD FOR CONTROLLING DISK ARRAY DEVICE	
TC/AU	:	2186	
Examiner	:	TBD	
Docket No.	:	H-1211	
Customer No.:		24956	

PETITION TO MAKE SPECIAL
(ACCELERATED EXAMINATION UNDER MPEP § 708.02(VIII))

MAIL STOP PETITIONS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Applicants petition the Commissioner to make the above-identified

application special in accordance with 37 CFR §1.102(d). In support of this Petition,

pursuant to MPEP § 708.02(VIII), Applicants state the following.

(A)   REQUIRED FEE

This Petition is accompanied by the fee set forth in 37 CFR § 1.117(h).

Payment of the fee has been made in the manner set forth below in Section (G).

08/31/2005 MBEYENE1 00000031 10791479
01 FC:1464   130.00 OP

(B)   ALL CLAIMS ARE DIRECTED TO A SINGLE INVENTION

Claims 1-20 are pending in the application. All the pending claims of the application are directed to a single invention. If the Office determines that all claims in the application are not directed to a single invention, Applicant will make election without traverse as a prerequisite to the grant of special status, in conformity with established telephone restriction practice.

As set forth in independent claims 1, 17 and 20, the invention is a disk array device and method for controlling a disk array device. Under claim 1, the invention is a disk array device comprising: a plurality of hard disk drives; at least one channel control section having a plurality of ports that are connectable to at least one information processing device via cables, and that receives data input/output requests from the least one information processing device to the plurality of hard disk drives; at least one disk control section that is communicatably connected to the plurality of hard disk drives and that sends data input/output requests to the plurality of hard disk drives based on the data input/output requests to the plurality of hard disk drives that are received by the at least one channel control section: and a shared memory that is accessible by the at least one channel control section and the at least one disk control section for reading and writing data therein, wherein the shared memory stores a port control table that sets control information indicating whether the plurality of ports are permitted for use, and the at least one channel control section refers to the control information set in the port control table and

determines whether to respond to a connection request regarding the ports received from the at least one information processing device.

Additionally, under independent claim 17, the invention is a method for controlling a disk array device, the disk array device comprising a plurality of hard disk drives, at least one channel control section having a plurality of ports that are connectable to at least one information processing device via cables, and that receives a data input/output request from the least one information processing device to the plurality of hard disk drives, at least one disk control section that is communicatably connected to the plurality of hard disk drives and that sends a data input/output request to the plurality of hard disk drives based on the data input/output request to the plurality of hard disk drives that is received by the at least one channel control section, and a shared memory that is accessible by the at least one channel control section and the at least one disk control section for reading and writing data therein, wherein the shared memory stores a port control table that sets control information indicating whether the plurality of ports are permitted for use, the method comprising the steps conducted by the at least one channel control section: referring to the control information set in the port control table; and determining whether to respond to a connection request regarding the ports received from the at least one information processing device.

Further, under independent claim 20, the invention is a disk array device comprising: a plurality of hard disk drives; at least one channel control section having a plurality of ports that are connectable to at least one information processing device

via fiber cables, and that receives data input/output requests from the at least one

information processing device to the plurality of hard disk drives; at least one disk

control section that is communicatably connected to the plurality of hard disk drives

and that sends data input/output requests to the plurality of hard disk drives based

on the data input/output requests to the plurality of hard disk drives that are received

by the at least one channel control section; a shared memory that is accessible by

the at least one channel control section and the at least one disk control section for

reading and writing data therein; a cache memory that is used by the at least one

channel control section and the at least one disk control section to temporarily store

data in association with the data input/output request; and a management terminal

that is communicatably connectable, wherein the channel control section includes at

least one protocol processor that is communicatably connected to the plurality of

ports, and controls sending and receiving data to and from the information

processing device, at least one channel processor that is communicatably connected

to the at least one protocol processor, the shared memory and the cache memory,

and governs the overall control of the channel control section, and a local memory

that is communicatably connected to the at least one channel processor and is

accessed by the at least one channel processor to read and write data therein, the

management terminal sets in the port control table the number of ports available for

use among the plurality of ports, the at least one channel processor stores in the port

control table the number of ports in use that are permitted to be used among the

plurality of ports, the at least one protocol processor inquires the at least one channel

processor of an availability of the ports, when connecting the fiber cables to the ports

and upon receiving a primitive sequence in a link initialization through the ports, the

at least one channel processor refers to the number of ports available for use and

the number of ports in use stored in the port control table, notifies the at least one

protocol processor of a permission to use the ports when the number of ports in use

is less than the number of ports available for use, and notifies the at least one

protocol processor of a prohibition to use the ports when the number of ports in use

is equal to or greater than the number of ports available for use, and the at least one

protocol processor initializes linkages in response to the primitive sequence in the

link initialization processing upon receiving a notification of the permission to use

from the at least channel processor, and does not respond to the primitive sequence

in the link initialization upon receiving a notification of the prohibition to use.

(C)   PRE-EXAMINATION SEARCH

A pre-examination search has been conducted, directed to the invention as

claimed. The pre-examination search was conducted in the following US Manual of

Classification areas:

Class	Subclass
707	9
709	213-229, 242
711	100, 111-114, 118, 152-156, 161-164, 170
713	200, 201
714	4-8

Furthermore, a keyword search was conducted on the USPTO's EAST

database, including the US patent database, the published patent applications

database, and the European and Japanese abstract databases. In addition, a

search for non-patent literature was conducted on the ACM (Association for

Computing Machinery) online databases.

**(D)   REFERENCES DEEMED MOST-CLOSELY RELATED TO THE SUBJECT
MATTER ENCOMPASSED BY THE CLAIMS**

Based upon a review of the documents located by the search and the

documents already of record in the application, the references deemed to be most-

closely related to the subject matter encompassed by the claims are listed below.

These documents were made of record in the present application by the Information

Disclosure Statements filed June 10 and April 19, 2005.

Document No.	Inventor
US 5860137	Raz et al.
US 6012151	Mano
US 6484173	O'Hare et al.
US 6606695	Kamano et al.
US 6745281	Saegusa
US 20030131192	Nakamura et al.
US 20040054866	Blumenau et al.
US 20040158673	Matsunami et al.
US 20040249929	Goodman

Because all of the above-listed references are already of record in the present

application, in accordance with MPEP § 708.02(VIII)(D), additional copies of these

documents have not been submitted with this Petition.

(E)   DETAILED DISCUSSION OF THE REFERENCES

Following a brief discussion of the invention, the references deemed most-closely related are discussed below in Section (E)2, pointing out, with the particularity required by 37 CFR 1.111 (b) and (c), how the claimed subject matter is patentable over the teachings of these documents.

1.   Discussion of the Invention

Under the invention a disk array device retains information regarding a number of ports actually required at the time the disk array device is installed. The disk array device includes a channel control section that refers to information in a port control table for determining whether to respond to a connection request, e.g., a link initialization request, from an information processing device. It is submitted that the cited references, whether taken individually, or in combination, fail to teach or suggest the invention as claimed.

Accordingly, it is submitted that the present invention is patentable over the cited references because, as set forth in independent claims 1 and 17, a feature of the invention includes a disk array device with at least one channel control section that refers to control information set in a port control table, and determines whether to respond to a connection request regarding the ports received from at least one information processing device. The prior art does not teach such a disk array device and method of controlling a disk array device.

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Similarly, as recited in claim 20, a feature of the invention includes that, when connecting fiber cables to the ports in a disk array device, and upon receiving a primitive sequence in a link initialization through the ports, the at least one channel processor refers to the number of ports available for use and the number of ports in use stored in the port control table, notifies at least one protocol processor of a permission to use the ports when the number of ports in use is less than the number of ports available for use, and notifies the at least one protocol processor of a prohibition to use the ports when the number of ports in use is equal to or greater than the number of ports available for use.

As will be discussed in more detail below, the prior art does not teach or suggest, at a minimum, the above-described features.

2.   Discussion of the References Deemed to be Most-Closely Related

The patent to Raz et al., US 5860137, discloses a method and system for operating a data storage system that includes a plurality of host connections for connecting host processors to the data storage system. The data storage system includes digital storage that is partitioned into a plurality of volumes. The method includes the steps of mapping the plurality of volumes to the plurality of host connections so that each of the host connections has associated with it a corresponding subset of the volumes and where a host processor connected to any given one of the host connections is able to access only the volumes that are mapped to that host connection. The data storage system supports a connect and a

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disconnect command. The connect command enables a host processor to map a designated one of the volumes to a designated one of the host connections, and the disconnect command enables a host processor to unmap a designated one of the volumes from a designated one of the host connections. (See, e.g., Abstract and column 1, line 39, through column 2, line 59.) Thus, Raz et al. is directed to mapping between host processors and volumes on a storage system, and does not address connection request regarding ports in the storage system. Accordingly, Raz et al. do not disclose a disk array device with at least one channel control section that refers to control information set in a port control table, and determines whether to respond to a connection request regarding the ports received from at least one information processing device, as recited in claims 1 and 17. Additionally, Raz et al. provide no teachings regarding connecting fiber cables to the ports, or referring to the number of ports available for use. Thus, Raz et al. do not disclose connecting fiber cables to the ports, and upon receiving a primitive sequence in a link initialization through the ports, the at least one channel processor refers to the number of ports available for use and the number of ports in use stored in the port control table, notifies at least one protocol processor of a permission to use the ports when the number of ports in use is less than the number of ports available for use, and notifies the at least one protocol processor of a prohibition to use the ports when the number of ports in use is equal to or greater than the number of ports available for use, as recited in claim 20.

The patent to Mano, US 6012151, shows an information processing apparatus that includes at least one I/O device having a plurality of ports. The I/O device includes an I/O port status management arrangement for maintaining an I/O port status table listing statuses of the plurality of I/O ports, a processor status management arrangement for maintaining a processor status table listing statuses of the plurality of processors, and a correspondence table management arrangement for managing correspondence between the plurality of I/O ports and pairs of active and standby processors using a correspondence table. An I/O port status management means 21 monitors whether or not an I/O port is installed in accordance with the I/O port status table. The margin of operability of each of the processors is determined by referring to the maximum number of I/O ports that each of the processors can handle, and the number of I/O ports that each of the processors is handling as an active processor. Maintenance personnel can block an I/O port in the active system using a command. The processors receiving the command change the status of the relevant I/O port to "blocked", disabling any access to that I/O port. Uninstallation of an I/O port is possible only while the I/O port is in a blocked status. Therefore, uninstallation of an I/O port is started after the maintenance personnel block the relevant I/O port. When the maintenance personnel unblocks the I/O port using a command, the processors are notified by the I/O port status change report command, and the processors receiving the command restart access to the I/O port. (See, e.g., Abstract; column 3, line 6, through column 4, line 14; and column 6, line 20, through column 8, line 54.) Thus, while Mano

includes various tables for tracking correspondence between I/O ports and

processors, Mano teaches that maintenance personnel must manually issue

commands for blocking and unblocking ports. More particularly, Mano does not

teach a disk array device with at least one channel control section that refers to

control information set in a port control table, and determines whether to respond to

a connection request regarding the ports received from at least one information

processing device, as recited in claims 1 and 17. Additionally, Mano has no teaching

of connecting fiber cables to the ports, or referring to the number of ports available

for use. Thus, Mano does not teach claim 20, wherein when connecting fiber cables

to the ports, and upon receiving a primitive sequence in a link initialization through

the ports, the at least one channel processor refers to the number of ports available

for use and the number of ports in use stored in the port control table, notifies at least

one protocol processor of a permission to use the ports when the number of ports in

use is less than the number of ports available for use, and notifies the at least one

protocol processor of a prohibition to use the ports when the number of ports in use

is equal to or greater than the number of ports available for use.

The patent to O'Hare et al., US 6484173, discloses a method and system for

controlling access to a data storage device that includes defining a plurality of groups

that access the data storage device, defining a plurality of pools of devices of the

data storage device, and, for at least one of the groups, determining access rights

with respect to at least one of the pools. The pools of devices may include

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communication ports and/or memory segments of the storage element. The access

rights may indicate whether system calls are allowed on the communication ports. In

some embodiments, restricting access to a data storage device includes coupling

each of a plurality of host requestor systems to the storage element by one of a

plurality of ports provided for the storage element and selectively determining, for

each of the ports, whether system calls are allowed, where, for the ports in which

system calls are not allowed, a system call by the host systems coupled to it causes

the storage element to indicate that the system call was not performed. In other

embodiments, the access to pools of memory resources having a unique ID number

is restricted to requestors having unique ID numbers in a data base that matches

allowed requestors and request types to allowed pools of memory. (See, e.g.,

Abstract and column 4, line 31, through column 5, line 3.) Accordingly, O'Hare et al.

teach inhibiting system calls at the ports, but this is not the same as responding to a

connection request regarding a port. Thus, unlike the present invention, O'Hare et

al. do not disclose a disk array device with at least one channel control section that

refers to control information set in a port control table, and determines whether to

respond to a connection request regarding the ports received from at least one

information processing device, as recited in claims 1 and 17. Furthermore, O'Hare et

al. provide no disclosure of connecting fiber cables to the ports, or referring to the

number of ports available for use. More particularly, O'Hare et al. do not teach claim

20, wherein when connecting fiber cables to the ports, and upon receiving a primitive

sequence in a link initialization through the ports, the at least one channel processor

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refers to the number of ports available for use and the number of ports in use stored in the port control table, notifies at least one protocol processor of a permission to use the ports when the number of ports in use is less than the number of ports available for use, and notifies the at least one protocol processor of a prohibition to use the ports when the number of ports in use is equal to or greater than the number of ports available for use.

The patent to Kamano et al., US 6606695, discloses storage regions under the command of a storage controller that can be enabled and disabled to access by automatically registering connected host computers. Such a system can be achieved by taking a step of acquiring N_Port_Name information included in a login frame from the host computers, and a step of displaying a table of access rights of host computers to a logical unit under the command of a storage controller. A security table 200 for the storage controller can be generated by a supervisor's setting the access enable/disable flag information. Referring to FIG. 1, there are shown host computers 10, 20, 30, each acting as a central processing unit for performing data processing. Since a storage controller 40 cannot accept new I/O of host computer 10, 20, 30 at the time of newly starting, a panel 47 is used to assign those host computers to respective ports of the front end control unit 41 that the storage controller 40 can permit to access to the ports. Where a new host computer is added to the system, a supervisor assigns the host computer, and makes it enabled for access to a port by use of a panel 47. (See, e.g., Abstract; column 2,

line 61, through column 3, line 52; column 7, line 57, through column 8, line 45; and

Figure 1.) However, Kamano et al. require that a supervisor assign ports to host

computers upon connection, rather than providing a channel control section that

refers to control information set in a port control table. Thus, Kamano et al. are

concerned with access rights to the storage system, rather than a connection request

regarding a port. Accordingly, Kamano et al do not teach a disk array device with at

least one channel control section that refers to control information set in a port

control table, and determines whether to respond to a connection request regarding

the ports received from at least one information processing device, as set forth in

claims 1 and 17. Further, Kamano et al. provide no disclosure related to connecting

fiber cables to the ports, or referring to the number of ports available for use. More

particularly, Kamano et al. do not teach connecting fiber cables to the ports, and

upon receiving a primitive sequence in a link initialization through the ports, the at

least one channel processor refers to the number of ports available for use and the

number of ports in use stored in the port control table, notifies at least one protocol

processor of a permission to use the ports when the number of ports in use is less

than the number of ports available for use, and notifies the at least one protocol

processor of a prohibition to use the ports when the number of ports in use is equal

to or greater than the number of ports available for use, as recited in claim 20.

The patent to Saegusa, US 6745281, discloses a fiber channel connection

magnetic disk device and controller which has a plurality of fiber-channel

specification supporting port controllers, comprising: a port controller for managing

the relationship between an identifier allocated to each host and a logical volume

accessible from the host having the identifier; and a local access right management

table memory for storing the management state of a logical volume accessible from

an indicated host, the port controller being capable of rejecting an access from hosts

other than the indicated host. The port controller includes a local access right

management table, and at the reception time of an access command, the port

controller checks whether the port ID in the access command is registered in the

local access right management table memory of the port controller. If the same port

ID is registered, the port controller allows the access, while if the port ID is not

registered, the port controller rejects the access. (See, e.g., Abstract and column 3,

line 11, through column 4, line 43.) Thus, Saegusa uses the port controller to control

access to the storage system from already-connected devices, and is not concerned

with a connection request of an information processing device regarding a port.

Accordingly, Saegusa does not teach a disk array device with at least one channel

control section that refers to control information set in a port control table, and

determines whether to respond to a connection request regarding the ports received

from at least one information processing device, as recited in claims 1 and 17.

Further, Saegusa has no disclosure regarding connecting fiber cables to the ports, or

referring to the number of ports available for use. More particularly, Saegusa does

not teach connecting fiber cables to the ports, and upon receiving a primitive

sequence in a link initialization through the ports, the at least one channel processor

refers to the number of ports available for use and the number of ports in use stored

in the port control table, notifies at least one protocol processor of a permission to

use the ports when the number of ports in use is less than the number of ports

available for use, and notifies the at least one protocol processor of a prohibition to

use the ports when the number of ports in use is equal to or greater than the number

of ports available for use, as recited in claim 20.

The published patent application to Nakamura et al., US 20030131192, shows

a clustering disk subsystem that includes a switch holding a distribution table that

can modify the a destination of a request from a host computer. The distribution

table holds correspondence information for a destination channel control unit of an

access request from a host computer and a disk controller port number to which the

request is transferred. If a first channel control unit has a fault or is under high load,

the distribution table has a feature that it can set plural destinations for one address.

By using the distribution table, an original request for the first destination channel

control unit can be divided among other channel control units, which disperses a

heavy load on the destination channel control unit, and allows faults to be handled.

(See, e.g., Abstract and paragraphs 10-11, 43-44 and 54.) Thus, while Nakamura et

al. address redistribution of a load on disk controllers, Nakamura et al. provide no

teaching regarding handling connection requests received from an information

processing device. More particularly, Nakamura et al. do not teach a disk array

device with at least one channel control section that refers to control information set

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in a port control table, and determines whether to respond to a connection request

regarding the ports received from at least one information processing device, as

recited in claims 1 and 17. Further, Nakamura et al. provide no teachings regarding

connecting fiber cables to ports, or referring to the number of ports available for use.

Thus, Nakamura et al do not disclose that, when connecting fiber cables to the ports,

and upon receiving a primitive sequence in a link initialization through the ports, the

at least one channel processor refers to the number of ports available for use and

the number of ports in use stored in the port control table, notifies at least one

protocol processor of a permission to use the ports when the number of ports in use

is less than the number of ports available for use, and notifies the at least one

protocol processor of a prohibition to use the ports when the number of ports in use

is equal to or greater than the number of ports available for use, as recited in claim

20.

The published patent application to Blumenau et al., US 20040054866,

discloses an apparatus that has host ports for coupling hosts to data storage

devices. The data storage devices are configured into logical storage units, and the

apparatus is programmed with a mapping of the hosts to respective logical storage

units. The apparatus decodes a host identifier and a logical storage unit

specification from each data access request received at each host port, and

determines whether or not the decoded host identifier and logical storage unit

specification are in conformance with the mapping in order to permit or deny data

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access of the logical storage unit through the host port. For example, the apparatus

includes a switch for routing the data storage access requests from the host ports to

ports that provide access to the data storage, and a set of logical volumes of storage

are accessible from each of the ports that provide access to the data storage. The

data storage subsystem includes data storage and a storage controller coupled to

the data storage for controlling access to the data storage. The storage controller

has at least one physical data port for connecting the storage controller into a data

network for data transmission between the data storage and host processors in the

data network. The storage controller is programmed to provide a plurality of virtual

ports that are not physical ports in the data network but that appear to the host

processors to be physical ports in the data network that provide access to the data

storage and that are connected to the physical data port by a switch in the storage

controller for routing storage access requests from the physical data port to the

virtual ports. (See, e.g., Abstract and paragraphs 10-11.) However, unlike the

present invention, Blumenau et al. is directed to controlling access requests from

already-connected devices, rather than a connection request regarding a port. Thus,

Blumenau et al. do not teach a disk array device with at least one channel control

section that refers to control information set in a port control table, and determines

whether to respond to a connection request regarding the ports received from at

least one information processing device, as recited in claims 1 and 17. Additionally

Blumenau et al. do not teach connecting fiber cables to the ports, or referring to the

number of ports available for use. More particularly, Blumenau et al. do not disclose

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connecting fiber cables to ports in a disk array device, and upon receiving a primitive

sequence in a link initialization through the ports, the at least one channel processor

refers to the number of ports available for use and the number of ports in use stored

in the port control table, notifies at least one protocol processor of a permission to

use the ports when the number of ports in use is less than the number of ports

available for use, and notifies the at least one protocol processor of a prohibition to

use the ports when the number of ports in use is equal to or greater than the number

of ports available for use, as recited in claim 20.

The published patent application to Matsunami et al., US 20040158673,

shows a disk storage system including a controller, a first interface node coupled to a

computer, a plurality of second interface nodes connected to any or one of the

storage subsystems, a switching means connecting between the first interface node

and a plurality of the second interface nodes to perform frame transfer between a

first interface node and a plurality of second interface nodes based on node address

information added to the frames. In order to use the disk array system, the setting of

structural information of the disk array subset must be made for the disk array switch.

A system administrator can acquire structural setup information for the disk array

switch and the disk array subset from a management console by way of a disk array

configuration manager. The administrator can make different kinds of required

entries of setup information such as logic unit structural setup for the desired system

structure, RAID level settings, and alternative path settings for use when trouble

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occurs. The disk array configuration manager can receive that setting information, and transfer that setting information to the each disk array subset and the disk array switch. In the disk array switch, the communications controller acquires the setup information and sets the structural information such as the address space information for each of the disk array subsets by means of managing processor. The managing processor distributes the structural information of the disk array subset to the each of the host I/F nodes and the disk array I/F nodes by way of a crossbar switch. When the nodes receive this information, a searching processor stores this structural information in disk array configuration table. In the disk array subset, the disk array subset configuration manager acquires the setup information and stores it in a shared memory. A host microprocessing unit and the lower microprocessing unit refer to this setup information in the shared memory and perform configuration management. (See, e.g., Abstract and paragraphs 8-11, 43-44 and 59-60.) However, Matsunami et al. fail to present any teaching of referring to a port control table when responding to a connection request regarding ports. Thus, Matsunami et al. do not teach a disk array device with at least one channel control section that refers to control information set in a port control table, and determines whether to respond to a connection request regarding the ports received from at least one information processing device, as recited in claims 1 and 17. Further, Matsunami et al. make no mention of connecting fiber cables to ports, or referring to the number of ports available for use. More particularly, Matsunami et al. do not teach that, when connecting fiber cables to the ports, and upon receiving a primitive sequence in a link

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initialization through the ports, the at least one channel processor refers to the

number of ports available for use and the number of ports in use stored in the port

control table, notifies at least one protocol processor of a permission to use the ports

when the number of ports in use is less than the number of ports available for use,

and notifies the at least one protocol processor of a prohibition to use the ports when

the number of ports in use is equal to or greater than the number of ports available

for use, as recited in claim 20.

The published patent application to Goodman, US 20040249929, discloses a

system and method for limiting access to control units channel-connected to host

computers through a FICON switch. The control unit port of the FICON switch

receives requests from an attached host to provide configuration information

regarding the switch ports. The control unit port deliberately misrepresents the port

configuration of the switch by reporting that ports outside the zone of the requesting

host are not installed, even though these ports may in fact be installed for use by

other hosts that belong to other zones. The configuration of FIG. 1 potentially

enables connection, at least at the physical layer level, of either S/390 channel (i.e.,

the channels of the S/390 hosts used by Customer A 110 and Customer B 120) to

any of the four control units 130, 140, 150, 160. A server 230 maintains a visibility

table 240 that shows the ports that a host is allowed to connect to. When the control

unit port receives a request from a host for information regarding the switch ports

that the host is allowed to use, it passes this request to the name server. The name

server determines the ID of the channel conveying the request, and determines the

zone that includes the requesting host. For at least one switch port that is not in the

zone that includes the requesting host, the name server sends an indication that the

switch port is not installed, even though the switch port is in fact installed for use by

another host. (See, e.g., Abstract and paragraphs 6, 13, 16-18, 21 and 24.)

However, unlike the present invention, Goodman is directed to a FICON switch

rather than a disk array device. Further, Goodman does not teach a channel control

section in a disk array device that determines whether to respond to a connection

request regarding ports. Accordingly, Goodman does not teach a disk array device

with at least one channel control section that refers to control information set in a port

control table, and determines whether to respond to a connection request regarding

the ports received from at least one information processing device, as recited in

claims 1 and 17. Additionally Goodman does not teach connecting fiber cables to

the ports, or receipt of a primitive sequence in a link initialization through the ports.

More particularly, Goodman does not disclose connecting fiber cables to ports in a

disk array device, and upon receiving a primitive sequence in a link initialization

through the ports, the at least one channel processor refers to the number of ports

available for use and the number of ports in use stored in the port control table,

notifies at least one protocol processor of a permission to use the ports when the

number of ports in use is less than the number of ports available for use, and notifies

the at least one protocol processor of a prohibition to use the ports when the number

of ports in use is equal to or greater than the number of ports available for use, as set forth in claim 20.

(F)   CONCLUSION

As demonstrated by the above discussion, the references fail to teach or suggest, at a minimum, a disk array device with at least one channel control section that refers to control information set in a port control table, and determines whether to respond to a connection request regarding the ports received from at least one information processing device, as recited in claims 1 and 17.

Further, the references fail to teach or suggest, at a minimum, connecting fiber cables to ports in a disk array device, and upon receiving a primitive sequence in a link initialization through the ports, the at least one channel processor refers to the number of ports available for use and the number of ports in use stored in the port control table, notifies at least one protocol processor of a permission to use the ports when the number of ports in use is less than the number of ports available for use, and notifies the at least one protocol processor of a prohibition to use the ports when the number of ports in use is equal to or greater than the number of ports available for use, as recited in claim 20.

Thus, it is submitted that these claims are is patentable over the cited references taken individually, or in combination with each other. The remaining claims are dependent claims, claim additional features of the invention, and are patentable at least because they depend from an allowable base claim. Accordingly,

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the requirements of 37 CFR §1.102(d) having been satisfied, the Applicants request that this Petition to Make Special be granted and that the application be examined according to prescribed procedures set forth in MPEP §708.02 (VIII).

The Applicants prepared this Petition in order to satisfy the requirements of 37 C.F.R. §1.102(d) and MPEP §708.02 (VIII). The pre-examination search required by these sections was "directed to the invention as claimed in the application for which special status is requested." MPEP §708.02 (VIII). The search performed in support of this Petition is believed to be in full compliance with the requirements of MPEP §708.02 (VIII); however, Applicants make no representation that the search covered every conceivable search area containing relevant prior art. It is always possible that prior art of greater relevance to the claims may exist. The Applicants urge the Examiner to conduct his or her own complete search of the prior art, and to thoroughly examine this application in view of the prior art cited above and any other prior art that may be located by the Examiner's independent search.

Further, while the Applicants have identified and discussed certain portions of each cited reference in order to satisfy the requirement for a "detailed discussion of the references, which discussion points out, with the particularly required by 37 C.F.R. §1.111(b) and (c), how the claimed subject matter is patentable over the references" (MPEP §708.02(VIII)), the Examiner should not limit review of these documents to the identified portions, but rather is urged to review and consider the entirety of each reference.

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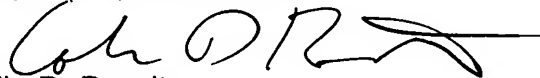## (G)   FEE PAYMENT (37 C.F.R. 1.17(h))

The fee required by 37 C.F.R. § 1.17(h) is to be paid by:

[X]   the Credit Card Payment Form (attached) for $130.00.

[ ]   charging Account 50-1417 the sum of $130.00.

Please charge any shortage in fees due in connection with the filing of this

paper, including extension of time fees, or credit any overpayment of fees, to the

deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit

Account No. 50-1417. A duplicate of this petition is attached.

Respectfully submitted,

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